

What is claimed is:

1. A radio transmission apparatus comprising:
 - first spreading means for spreading a pilot signal;
 - superimposing means for superimposing the spread
 - 5 pilot signal on transmission data; and
 - transmitting means for transmitting the output signal of this superimposing means by time division or frequency division.
- 10 2. The radio transmission apparatus according to claim 1, wherein the transmitting means transmits a signal resulting from multiplexing signals of a plurality of channels from one transmission antenna.
3. A radio reception apparatus comprising:
 - receiving means for receiving a signal transmitted
 - 15 from the radio transmission apparatus according to claim 1; and
 - despreading means for extracting a pilot signal by despreading the output signal of this receiving means.
- 20 4. The radio reception apparatus according to claim 3, further comprising channel estimating means for performing a channel estimation using the pilot signal.
5. The radio reception apparatus according to claim 3, further comprising distance estimating means for performing a distance estimation using the pilot signal.
- 25 6. The radio reception apparatus according to claim 3, further comprising:
 - second spreading means for spreading the pilot signal output from the despreading means; and

eliminating means for subtracting the output pilot signal of said second spreading means from the output signal of the receiving means.

7. A radio communication terminal apparatus equipped
5 with a radio transmission apparatus, said radio transmission apparatus comprising:

first spreading means for spreading a pilot signal;
superimposing means for superimposing the spread
pilot signal on transmission data; and

10 transmitting means for transmitting the output signal of this superimposing means by time division or frequency division.

8. A radio communication terminal apparatus equipped
with a radio reception apparatus, said radio reception
15 apparatus comprising:

receiving means for receiving a signal transmitted from the radio transmission apparatus according to claim 1; and

despreading means for extracting a pilot signal by
20 despreading the output signal of this receiving means.

9. A radio communication base station apparatus equipped with a radio transmission apparatus, said radio transmission apparatus comprising:

25 first spreading means for spreading a pilot signal;
superimposing means for superimposing the spread pilot signal on transmission data; and

transmitting means for transmitting the output signal of this superimposing means by time division or

frequency division.

10. A radio communication base station apparatus equipped with a radio reception apparatus, said radio reception apparatus comprising:

5 receiving means for receiving a signal transmitted from the radio transmission apparatus according to claim 1; and

 despreading means for extracting a pilot signal by despreading the output signal of this receiving means.

10 11. A radio communication method comprising steps of:

 spreading a pilot signal, superimposing the spread pilot signal on transmission data and transmitting the superimposed signal by time division or frequency division on a transmitting side; and

15 despreading the reception signal and extracting the pilot signal on a receiving side.